

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 96-175

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF STOCKTON
AUSTIN ROAD LANDFILL FACILITY
CLASS III LANDFILL
SAN JOAQUIN COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board), finds that:

1. The City of Stockton (hereafter Discharger) owns and operates the Austin Road Landfill Facility. The Facility was previously regulated by Waste Discharge Requirements (WDRs) Order No. 94-303 in conformance with Title 23, California Code of Regulations (CCR), Division 3, Chapter 15 (hereafter Chapter 15). The Discharger filed a Report of Waste Discharge on 26 October 1995, requesting approval of updated WDRs permitting a horizontal and vertical expansion of the Landfill, a Materials Recovery Facility (MRF), composting, leachate storage and sedimentation ponds to the landfill facility.
2. Landfill operations began in 1955, temporarily closed from 1961 to 1963, reopened in 1964. The landfill accepts residential, commercial, and industrial solid waste generated within the incorporated boundaries of Stockton.
3. The Facility is 7 miles southeast of the City of Stockton on Austin Road in San Joaquin County, as shown in Attachment A, which is incorporated herein and made a part of this Order. The Facility covers 405.9 acres in the northwest 1/4 of Section 3, T1S, R7E, MDB&M and Section 34, T1S, R7E, MDB&M.
4. The Facility consists of three classified landfill units: LF-1, an existing Class III Landfill with a footprint of 123.3 acres; LF-2, a 143.8 acre Class III Landfill expansion to the south of LF-1; and LF-3, a Class III Landfill vertical expansion above LF-1 and LF-2; a 126.4 acre borrow area north of LF-1; a 13 acre composting facility; a 6 acre MRF; leachate treatment and holding facilities; and a sedimentation basin, as shown on Attachment B, which is incorporated herein and made a part of this Order.
5. LF-2 consists of Phases I through IV, and LF-3 consists of Phases V and VI.
6. The existing landfill, LF-1, will be closed after Phase I is opened. LF-1 will receive an interim cover of two feet foundation material, one foot of compacted soil with a permeability less than 1×10^{-6} cm/sec, and one foot of soil for vegetation.

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3. The MRF is 7 miles southeast of the City of Stockton on Austin Road in San Joaquin County, as shown in Attachment A, which is incorporated herein and made a part of this Order. The Facility covers 405.9 acres in the northwest 1/4 of Section 3, T1S, R7E, MDB&M and Section 34, T1S, R7E, MDB&M.
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14. The soils immediately underlying the landfill are valley fill deposits consisting of Cretaceous to Quaternary sediments. The first 20 to 40 feet are silty clay (CL) and sandy or clayey silts (ML). Below this is an interval of sands (SM, SC, and SW) down to 55 or 60 feet. Below this are more of the silts and clays down to at least 80 feet.
15. The first water-bearing formation is approximately 70 feet below the base of the landfill. The hydraulic gradient is generally to the north/northeast.
16. The ground water contaminant plume beneath the site occurs in the Victor Formation and recent alluvium and flows northeasterly toward the Stockton pumping depression. The ground water flow velocity ranged from 8 to 130 feet per year in 1995.
17. The beneficial uses of ground water are domestic, municipal, and agricultural.
18. The facility receives an average of 14.22 inches of precipitation per year as measured at Austin Road Landfill between the years 1976 and 1986.
19. The 100-year, 24-hour precipitation event for the site is 3.65 inches.
20. Surface drainage is to the North Fork of South Littlejohns Creek. The Discharger proposes to reroute surface drainage to the sedimentation pond at the west end of the site, as shown on Attachment B.
21. The beneficial uses of surface waters are domestic, agricultural supply, and ground water recharge. The beneficial uses of the North Fork of South Littlejohns Creek are propagation and sustenance of fish and aquatic life, recreation, and esthetic enjoyment.

OPERATION OF FACILITIES

22. The Discharger's current plans indicate that the existing Class III landfill facility and proposed expansions will reach capacity, at the earliest, by the year 2053. The total capacity of the disposal site is 18.1 million cubic yards.
23. The City has accepted, on a one time basis, approximately 20,000 cubic yards of digested sewage sludge from the City's wastewater treatment plant. The sludge is not currently being accepted at the landfill. The sludge has been stockpiled on LF-1, but will be removed and disposed off-site.

from the extracted water and the treated water is discharged to the north branch of the south fork of Littlejohns Creek. This discharge is regulated under separate Waste Discharge Requirements and NPDES permit.

CEQA AND OTHER CONSIDERATIONS

29. The City of Stockton has adopted a final environmental impact report (EIR) on the project in accordance with the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), and Title 14, CCR, Section 15301. The project may have the following significant impacts on water quality:
 - a. Ground water contamination would result from a failure of the liner and leachate collection system.
 - b. Surface and/or ground water contamination could result if differential settlement damaged the liner and/or the leachate collection system.
30. The Board has reviewed the EIR and these WDRs will mitigate or avoid the significant impacts on water quality as follows:
 - a. Ground water extraction wells developed as part of the Corrective Action Program will be monitored and maintained to extract any residual contamination by leachate.
 - b. Hazardous materials spotted during the required load checking program will be removed from the waste stream reducing the hazard from leachate should there be a leak from the leachate collection system.
 - c. The project includes a leak detection system, a series of secondary collection trenches beneath the liner and directly under the leachate collection trenches.
31. On 9 October 1991, the United States Environmental Protection Agency (USEPA) promulgated regulations (Title 40, Code of Federal Regulations, Parts 257 and 258, "federal MSW regulations" or "Subtitle D") that apply, in California, to dischargers who own or operate Class II or Class III landfill units at which municipal solid waste (MSWLF) is discharged. The majority of the federal MSW regulations became effective on the "Federal Deadline", which was 9 October 1993.

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2. Discharges of waste to either a landfill unit that has not received wastes or to a lateral expansion of a landfill unit are prohibited, unless the discharge is to an area equipped with a containment system which meets requirements in **B. Specifications**, below.
3. The discharge to landfill units of liquid or semi-solid waste (i.e., waste containing less than 50% solids), except dewatered sewage or water treatment sludge as provided in Section 2523(c) of Chapter 15, is prohibited.
4. The discharge to landfill modules of solid waste containing free liquid or moisture in excess of the waste's moisture holding capacity is prohibited.
5. The discharge of containerized liquids at this facility is prohibited.
6. The discharge of solid or liquid waste or leachate to surface waters, surface water drainage courses, or to ground water is prohibited.
7. The discharge of waste to ponded water from any source is prohibited.
8. The discharge of waste within 50 feet of surface waters not related to landfill drainage structures is prohibited.
9. The discharge of wastes which have the potential to reduce or impair the integrity of containment structures or which, if commingled with other wastes in the unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:
 - a. require a higher level of containment than provided by the unit;
 - b. are restricted 'hazardous wastes'; or
 - c. impair the integrity of containment structures,is prohibited.

B. DISCHARGE SPECIFICATIONS

General Specifications

1. Wastes shall only be discharged into, and shall be confined to, the landfill modules specifically designed for their containment.

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9. Each landfill unit phase constructed after the effective date of this Order shall be designed and constructed in accordance with Chapter 15 and this Order and approved by Board staff prior to operation. Prior to the beginning of construction for each new construction phase, a Final Design Report shall be submitted to Board Staff for review and approval and shall include, but not be limited to, the engineered design plans for the WMU, the contract specifications, a construction quality assurance (CQA) plan to verify that construction specifications will be met, and a revised water quality monitoring plan. Approval of the final design report shall be obtained from Board staff prior to construction of the landfill liner or cap. A final construction report shall be submitted for approval by Board staff after each phase of construction and prior to the discharge of waste into the constructed phase. The final construction report shall include, but not be limited to, as-built plans for the WMU, a CQA report with a written summary of the CQA program and all test results, analyses, and copies of the inspector's original field notes, and a certification as described in the Standard Provisions and Reporting Requirements.

Protection From Storm Events

10. Precipitation and drainage control systems shall be designed, constructed and maintained to accommodate the anticipated volume of precipitation and peak flows from surface runoff under 100-year, 24-hour precipitation conditions.
11. Waste management units shall be designed, constructed and operated in compliance with precipitation and flood conditions contained in the Standard Provisions and Reporting Requirements referenced in Provision D.1, below.
12. Annually, prior to the anticipated rainy season, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site and to prevent surface drainage from contacting or percolating through wastes.

Landfill Specifications

14. Municipal solid waste shall be discharged to either (a) that portion of a module which received wastes (i.e., that active portion of the module which is within the boundaries of the Existing Footprint), or (b) to an area equipped with a containment system which meets the additional requirements for both liners and leachate collection systems specified below.

C. RECEIVING WATER LIMITATIONS

Water Quality Protection Standards

The concentrations of Constituents of Concern in waters passing through the Points of Compliance shall not exceed the Concentration Limits established pursuant to Monitoring and Reporting Program No. 96-175, which is attached to and made part of this Order.

D. PROVISIONS

1. The Discharger shall comply with the Standard Provisions and Reporting Requirements, dated September 1993, which are hereby incorporated into this Order. The Standard Provisions and Reporting Requirements contain important provisions and requirements with which the Discharger must comply. A violation of any of the Standard Provisions and Reporting Requirements is a violation of these waste discharge requirements.
2. The Discharger shall comply with all applicable provisions of 23 CCR, Chapter 15, and 40 CFR Part 258 that are not specifically referred to in this Order.
3. The Discharger shall comply with Monitoring and Reporting Program No. 96-175, which is attached to and made part of this Order. This compliance includes, but is not limited to, maintenance of waste containment facilities and precipitation and drainage controls and monitoring ground water, leachate from the landfill units, the vadose zone and surface waters, throughout the active life of the waste management units and the post-closure maintenance period. A violation of Monitoring and Reporting Program No. 96-175 is a violation of these waste discharge requirements.
4. The discharger shall implement the corrective action program as described in Finding No. 27, in accordance Section 2550.10 of Chapter 15 to remediate releases from the landfill. In conjunction with the corrective action program, the Discharger shall establish and implement a water quality monitoring program which demonstrates the effectiveness of the corrective action program. Such a monitoring program shall be effective in determining the success of the corrective action program.
5. The Discharger shall maintain legible records of the volume and type of each waste discharged at each WMU and the manner and location of the discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance

E. REPORTING REQUIREMENTS

1. The Discharger shall comply with the reporting requirements specified in this Order, in Monitoring and Reporting Program Order No. 96-175 and in the Standard Provisions and Reporting Requirements.
2. The Discharger shall submit a closure and post-closure maintenance plan (or submit suitable modifications to a pre-existing plan), that complies with 40 CFR 258.60 and 258.61, with Article 8 of Chapter 15 and with Title 14 of the CCR.
3. The Discharger shall notify the Board in writing of any proposed change in ownership or responsibility for construction or operation of the WMUs. The Discharger shall also notify the Board of a material change in the character, location or volume of the waste discharge and of any proposed expansions or closure plans. This notification shall be given 90 days prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with these WDRs.
4. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator in writing of the existence of this Order. A copy of that notification shall be sent to the Board.
5. The Discharger shall submit a status report regarding the financial assurances for corrective action and closure every five years after the date of adoption of these requirements that either validates the ongoing viability of the financial instrument or proposes and substantiates any needed changes.
6. The Discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.
7. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with Monitoring and Reporting Program No. 96-175, as required by Section 13750 through 13755 of the California Water Code.

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The Discharger shall maintain water quality monitoring systems which are appropriate for monitoring and that comply with the provisions of Title 23, California Code of Regulations (CCR), Division 3, Chapter 15, Article 5.

A verification monitoring program confirmed VOC contamination along the entire downgradient edge of the landfill extending laterally as far as 1,000 feet downgradient of the edge of the landfill. A Corrective Action Program was approved by the Board for a groundwater extraction and treatment system to remediate volatile organic compounds detected in ground water beneath the landfill. Pumped ground water will be treated by passing it through an air stripper. The system is designed to treat approximately 305 gallons per minute, which is discharged to the north branch of the south fork of Littlejohns Creek.

Compliance with this Monitoring and Reporting Program, and with the companion Standard Provisions and Reporting Requirements, is ordered by Waste Discharge Requirements Order No. 96-175. Failure to comply with this Program, or with the Standard Provisions and Reporting Requirements, constitutes noncompliance with the Waste Discharge Requirements (WDR) and with the Water Code, which can result in the imposition of civil monetary liability.

A. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the WDRs. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. A short discussion of the monitoring results, including notations of any water quality violations, shall precede the tabular summaries.

Field and laboratory tests shall be reported in the quarterly monitoring reports. Quarterly monitoring reports shall be submitted to the Board by the 15th day of the month following the

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Monitoring Report or an Annual Summary Report having a Reporting Period that ends at the same time.

Standard Observations

Each monitoring report shall include a summary and certification of completion of all Standard Observations for the waste management unit, for the perimeter of the WMU, and for the receiving waters. The standard observations shall be performed on a weekly basis and shall include those elements as defined in the Standard Provisions and Reporting Requirements.

C. MONITORING

If the Discharger or the Board finds that there is a statistically significant increase in indicator parameters or waste constituents over the water quality protection standards (established pursuant to Monitoring and Reporting Program No. 96-175) at or beyond the Points of Compliance, the Discharger shall notify the Board or acknowledge the Board's finding in writing within seven days, and shall immediately resample for the constituent(s) or parameter(s) at the point where the standard was exceeded. Within 90 days, the Discharger shall submit to the Board the results of the resampling and either:

- a. a report demonstrating that the water quality protection standard was not, in fact, exceeded; or
- b. an amended Report of Waste Discharge for the establishment of a verification monitoring program, per Section 2557 of Chapter 15, which is designed to verify that water quality protection standards have been exceeded and to determine the horizontal and vertical extent of pollution.

D. REQUIRED MONITORING PROGRAMS

1. Solid Waste Monitoring Program

Nonhazardous Solid Waste Monitoring

The Discharger shall monitor all wastes discharged to the Class III landfill modules on a monthly basis and report to the Board as follows:

period of time short enough to avoid temporal variations in ground water flow which could preclude accurate determination of ground water gradient and direction. This information shall be included in the quarterly monitoring reports.

Statistical or non-statistical analysis should be performed as soon as the monitoring data are available.

3. Leachate Monitoring Program

If leachate surfaces, the discharger shall immediately sample the leachate and continue to sample and report the leachate at the frequencies listed in Table I thereafter. Also, should a Leachate Collection Removal System be constructed, it shall be monitored according to the schedule in Table I.

For COC detection, the leachate sump will be sampled in the fourth quarter of the year in which it is constructed, for the parameters and frequencies in Table I. Those COCs that are detected will be analyzed in leachate in the second quarter of the year following the year of construction. Any COCs detected in the retest sample shall be included in the COC list for ground water, surface water and unsaturated zone.

Thereafter, leachate samples for COC detection will be collected annually in the fourth quarter of the year. If constituents are detected that are not already COCs, leachate will be resampled for those constituents only in the second quarter of the following year. If the COC is detected in the retest sample it shall be added to the list of COCs in the ground water monitoring program, the surface water monitoring program, and the unsaturated zone monitoring program.

4. Ground Water Monitoring

Field and laboratory tests shall be reported in the quarterly monitoring reports. All "Monitoring Parameters" shall be graphed so as to show historical trends at each well.

The ground water surface elevation (in feet and hundredths, M.S.L.) in all wells shall be measured on a quarterly basis and used to determine the velocity and direction of ground water flow. This information shall be displayed on a water table contour map and/or ground water flow net for the site and submitted with the quarterly monitoring reports.

The corrective action monitoring network shall consist of upgradient background monitoring well MW-2, downgradient monitoring wells MW-12 and MW-13 in the upper water bearing zone. Downgradient shallow compliance wells are MW-1 and MW-4. Downgradient deep compliance wells are MW-6 and MW-7. Downgradient extraction wells are EW-1 and EW-2. Located adjacent to the extraction wells, are observation wells to determine hydraulic effects of ground water extraction on the shallow water-bearing zone and as such these wells are not presently part of the water-quality monitoring network. Other downgradient monitoring points consist of wells MW-10, MW-11, and MW-14. Locations of these wells are shown on Attachment B. Ground water samples shall be collected from all wells at the frequencies and analyzed for the parameters specified in Table II. As LF-2 is constructed, wells MW-3 and MW-5 will be destroyed and replaced by wells MW-3A and MW-5A which along with MW-2, will serve as upgradient background wells.

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5. Surface Water Monitoring

Littlejohns Creek shall be sampled upstream of the landfill at background monitoring point SW-1, and downstream at monitoring point SW-2. Surface water samples are to be collected in the first quarter of 1996 and quarterly thereafter when water is present. Samples shall be collected from all stations and analyzed at the frequency and for the monitoring parameters specified in Table IV.

Surface water monitoring reports shall be submitted with the corresponding semi-annual ground water monitoring reports and shall include evaluation of potential impacts of the facility on surface water quality and compliance with the Water Quality Protection Standard.

E. WATER QUALITY PROTECTION STANDARD

The Water Quality Protection Standard (Standard) consists of the following elements:

Constituents of Concern;
Concentration Limits;
Monitoring Points;
Points of Compliance; and
Compliance Period.

Each of these is described as follows:

1. Constituents of Concern

The 'COC list' (list of Constituents of Concern required under 23 CCR 2550.3) shall include all constituents listed in Tables I, II, and III (above), the Waste Discharge Requirements Order No. 96-175 and all constituents listed in Attachment D. The Constituents of Concern shall be for water-bearing media (i.e., ground water and surface water). The Discharger shall monitor all COCs every five years under the detection monitoring program, or more frequently as required under corrective action monitoring. For each monitoring period, the Discharger shall determine whether there is statistically significant evidence of a release from the landfill and whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Section 2550.7 of Chapter 15.

2. Concentration Limits

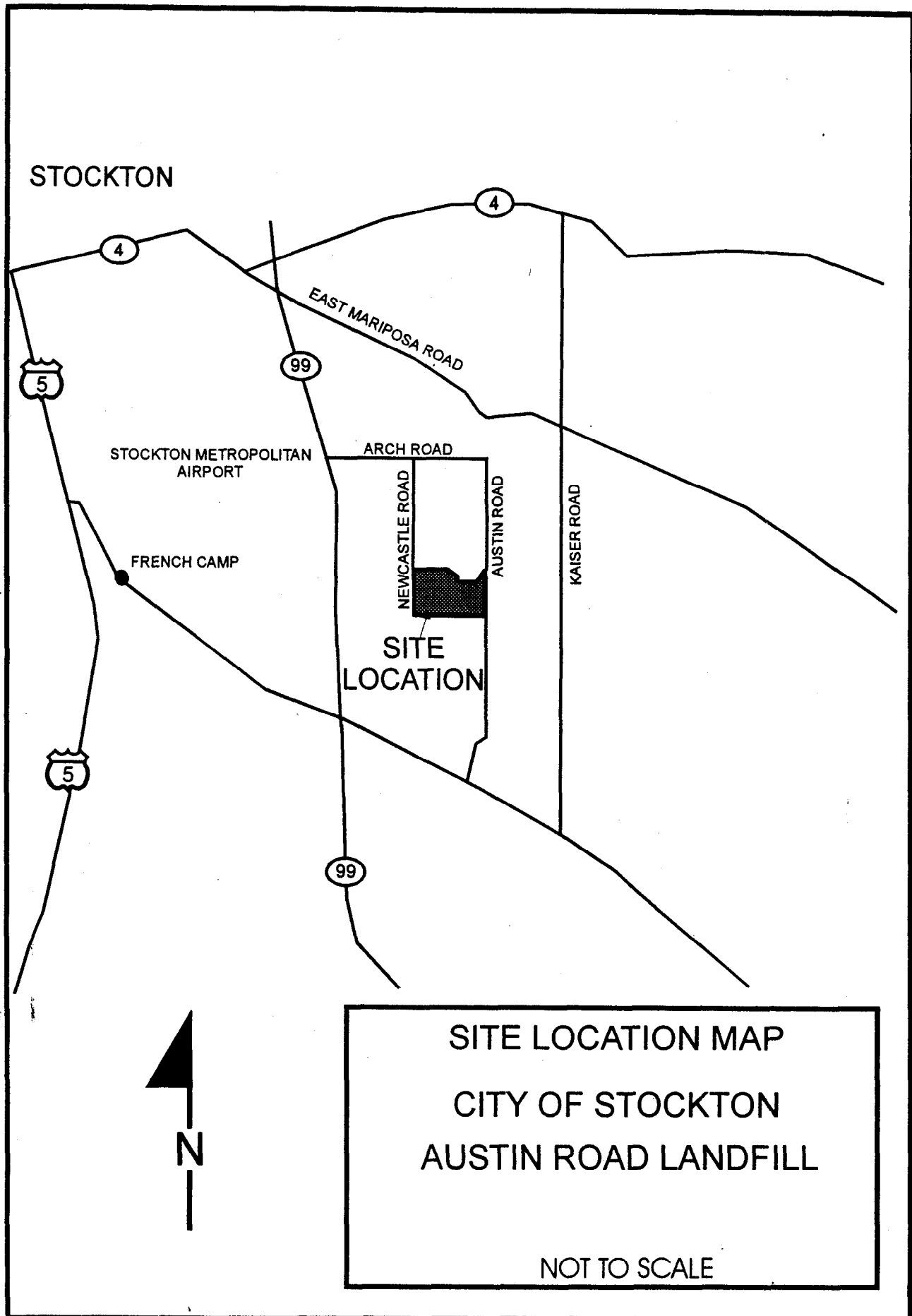
The Concentration Limit for any given Constituent of Concern or Monitoring Parameter in a given monitored medium (i.e., the uppermost aquifer) at a landfill shall be as follows, and shall be used as the basis of comparison with data from the Monitoring Points in that monitored medium:

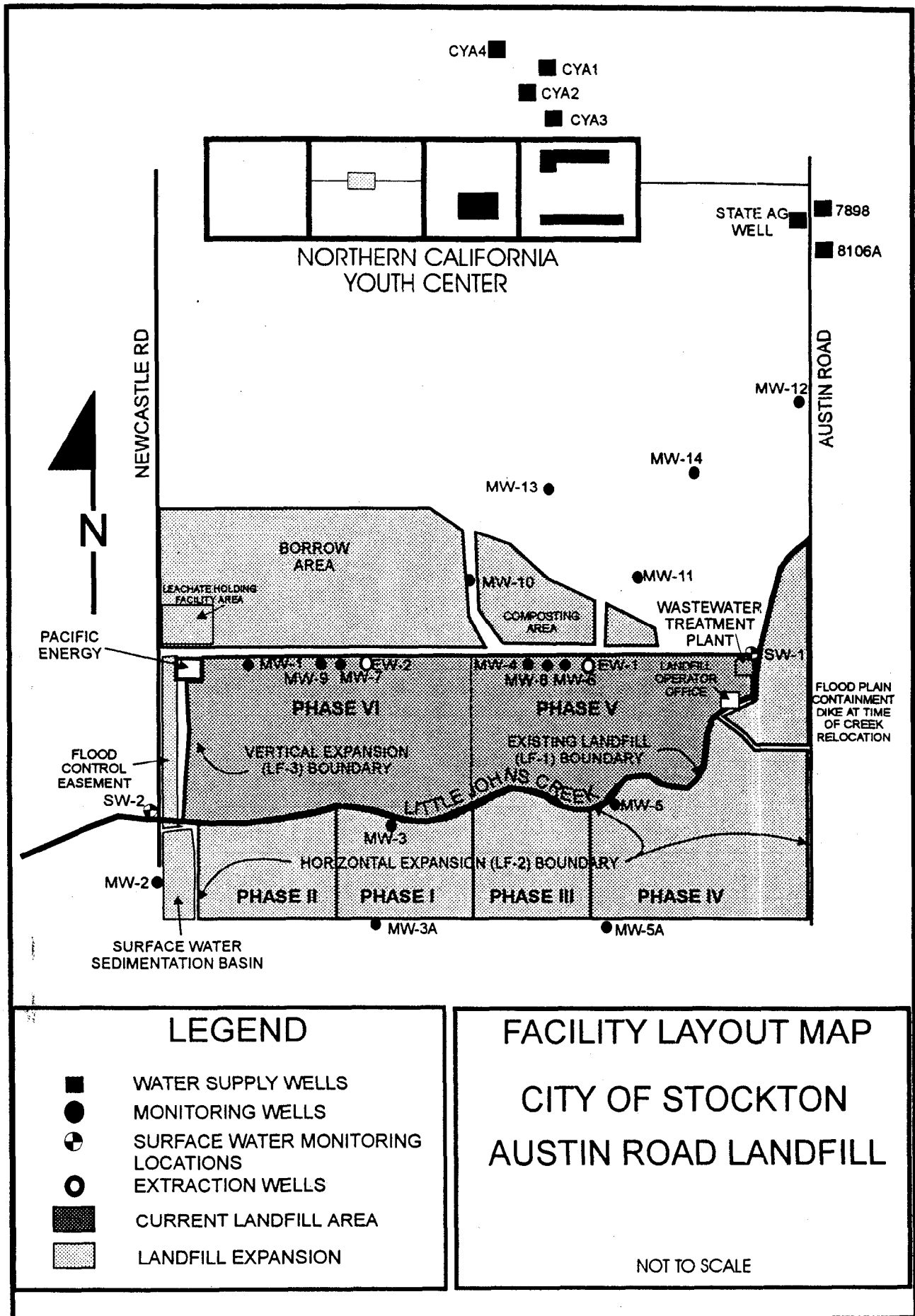
- a. The background value established in the Monitoring and Reporting Program for that constituent and medium;
- b. The constituent's background value, established anew during each Reporting Period using only data from all samples collected during that Reporting Period from the Background Monitoring Points for that monitored medium. Either:

GROUND WATER CONCENTRATION LIMITS

| <u>Constituent</u> | <u>Units</u> | <u>MW-2</u> |
|--|--------------|-------------|
| Specific Conductance (EC) | µmhos/cm | 1242 |
| pH | pH Units | 6.81-8.33 |
| Total Dissolved Solids (TDS) | mg/L | 970 |
| Alkalinity, Bicarbonate | mg/L | 461 |
| Chloride | mg/L | 310 |
| Sulfate | mg/L | 176 |
| Nitrate as N | mg/L | 4.05-28 |
| Total Organic Carbon | mg/L | * |
| Carbonate | mg/L | * |
| VOCs (EPA 8260 and 8270) | mg/L | Detect |
| Organochlorine Pesticide, PCB (EPA 8080) | mg/L | Detect |
| Chlorophenoxy Herbicides (EPA 8150) | mg/L | Detect |
| Organophosphorus Compounds (EPA 8141) | mg/L | Detect |
| Aluminum, dissolved | mg/L | 3.43 |
| Antimony, dissolved | mg/L | * |
| Arsenic, dissolved | mg/L | * |
| Barium, dissolved | mg/L | * |
| Beryllium, dissolved | mg/L | * |
| Cadmium, dissolved | mg/L | * |
| Chromium, dissolved | mg/L | * |
| Cobalt, dissolved | mg/L | * |
| Copper, dissolved | mg/L | * |
| Cyanide, dissolved | mg/L | * |
| Iron, dissolved | mg/L | 1.05 |
| Lead, dissolved | mg/L | * |
| Manganese, dissolved | mg/L | * |
| Mercury, dissolved | mg/L | 0.001 |
| Nickel, dissolved | mg/L | * |
| Selenium, dissolved | mg/L | * |
| Silver, dissolved | mg/L | * |
| Sodium, dissolved | mg/L | * |
| Sulfide, dissolved | mg/L | * |
| Thallium, dissolved | mg/L | * |
| Tin, dissolved | mg/L | * |
| Vanadium, dissolved | mg/L | * |
| Zinc, dissolved | mg/L | * |

* To be monitored quarterly for 1-year in order to determine a concentration limit.





Attachment C

MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Specific Conductivity
Chloride
Sulfate
Nitrate nitrogen

Constituents included in VOC_{water} (by USEPA Method 8260):

Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1-Dichloroethylene (1,1-Dichloroethene; Vinylidene chloride)
cis-1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethylbenzene

INFORMATION SHEET

CITY OF STOCKTON
AUSTIN ROAD LANDFILL FACILITY
CLASS III LANDFILL
SAN JOAQUIN COUNTY

The City of Stockton presently owns and operates a Class III landfill about seven miles southeast of Stockton, on Austin Road. The site consists of 184 acres, of which 124 acres are for landfilling, and 43 acres are used as a borrow area. The 184-acre facility was originally opened in 1955 and is currently accepting approximately 525,000 cubic yards (150,000 tons) of refuse per year.

The Discharger proposes an expansion of 143.8 acres to the facility. The expansion will develop in Phases I through IV of horizontal expansion to the south, followed by Phases V and VI of vertical expansion over the existing and new landfill areas. Liners are required for all of the new landfill footprint. The expansion shall also include: a 126 acre borrow area north of LF-1; a 13 acre composting facility; a six acre Materials Recovery Facility; a leachate treatment and holding facility; and a sedimentation basin.

The first water bearing formation is approximately 70 feet below the base of the landfill, with the hydraulic gradient to the north/northeast. The beneficial uses of ground water are domestic, municipal, and agricultural.

A Solid Waste Water Quality Assessment Test in 1989 found a significant ground water quality impact. The following volatile organic compounds (VOCs) were found in the downgradient monitoring wells: vinyl chloride (11 µg/l), tetrachloroethane (210 µg/l), trichloroethane (39 µg/l), and cis-1, 2-dichloroethane (36 µg/l), and numerous others. This was confirmed with further sampling. Supplemental sampling results indicated that VOCs were detected in California Youth Authority (CYA) wells CYA-1 and CYA-2 at levels equal to or slightly above action levels. However, confirmation sampling of the CYA wells did not detect any VOCs. Sampling at a private well at 8106A Austin Road did find VOCs, and this was confirmed by further sampling.

The Discharger constructed Well No. 14 between the 8106A Austin Road well and the confirmed plume location. Well No. 14 did not encounter the plume. Additional sampling and analysis are needed to determine if the plume extends to 8106A Austin Road.

A Corrective Action Plan was proposed by the Discharger on 24 April 1991 to address the chlorinated hydrocarbon impact to ground water. The plan was approved by the Board staff on 10 June 1991. Two extraction wells were installed and about 305 gpm are extracted and treated through a stripping tower. The treated water is discharged to surface water under an NPDES permit.

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Attachment D (continued)

Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methacrylate
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isophorone
Isosafrole
Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
Naphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)

Attachment D

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Inorganics (by USEPA Method):

| | |
|--------------------------|------|
| Aluminum | 6010 |
| Antimony | 6010 |
| Barium | 6010 |
| Beryllium | 6010 |
| Cadmium | 6010 |
| Chromium | 6010 |
| Chromium VI ⁺ | 7197 |
| Cobalt | 6010 |
| Copper | 6010 |
| Iron | 6010 |
| Manganese | 6010 |
| Silver | 6010 |
| Tin | 6010 |
| Vanadium | 6010 |
| Zinc | 6010 |
| Arsenic | 7061 |
| Lead | 7421 |
| Mercury | 7470 |
| Nickel | 7520 |
| Selenium | 7741 |
| Thallium | 7841 |
| Cyanide | 9010 |
| Sulfide | 9030 |

Report all peaks identified by the EPA test methods. Ground water and leachate samples shall be analyzed and reported as dissolved. Surface water samples shall be analyzed and reported as total recoverable metals as specified in EPA-600/4-79-020 dated March 1993. Unsaturated zone water samples shall be analyzed and reported as totals.

Volatile Organics (USEPA Method 8260):

Acetone
Acetonitrile (Methyl cyanide) Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene

WASTE DISCHARGE REQUIREMENTS
AUSTIN ROAD LANDFILL FACILITY
CLASS III LANDFILL
SAN JOAQUIN COUNTY

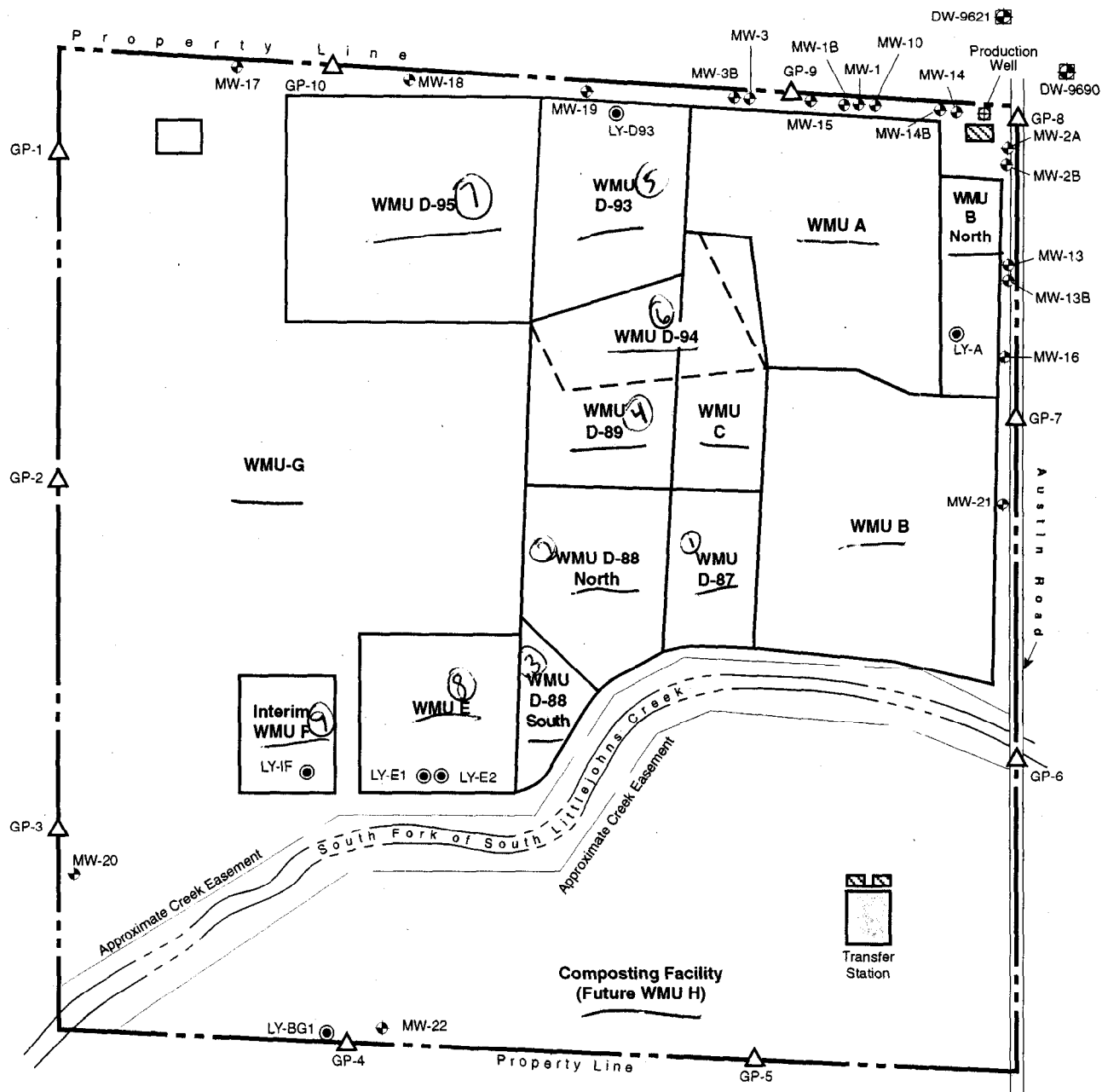
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Attachment D (continued)

Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semivolatle Organics (USEPA Method 8270 - base, neutral, & acid extractables):

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methylethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)

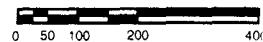


LEGEND

- MW-3 Approximate Monitoring Well Location
- DW-9621 Approximate Location of Off-Site Domestic Well
- Approximate Production Well Location
- LY-A Approximate Lysimeter Location
- GP-1 Approximate Gas Probe Location
- Structures Monitored for Gas



APPROXIMATE SCALE IN FEET



KLEINFELDER

SITE MAP AND MONITORING LOCATIONS

FORWARD LANDFILL
SAN JOAQUIN COUNTY, CALIFORNIA

PLATE

I-2

Drawn By: D. Shelhart
Project No. 23-483418-B09

Date: 4/20/99
Filename: 2070c.fh7